

## Lethbridge Experimental Station WEEKLY LETTER

### WHAT ABOUT WATER EROSION?

Normally, water erosion has not been considered as being of serious importance in Southern Alberta. However, the run-off from the melting snows and rains of the last two seasons has shown definitely that it can and does occur here. The results of even one seasons erosion may cause permanent injury to the soil.

Three types of water erosion have been recognized:

1. Sheet erosion, in which case the whole surface of the soil is washed away. This type is the least noticeable but probably the most serious.
2. Rill erosion, in which case tiny gullies occur down the slopes. This type of erosion often occurs in conjunction with sheet erosion.
3. Gully erosion, where gullies and small ravines are cut down to depths of several feet by the action of fairly large volumes of water flowing

down drainageways. The method of reducing the losses of soil from this type of erosion was outlined in a previous weekly letter.

The amount of water erosion of these different types either singly or in combination, depends on a number of factors including:

1. The amount of snow and rate of melting, and the amount and intensity of the rainfall.
2. The degree and length of slope of the land.
3. The type of vegetative covering.
4. The nature of the topsoil and subsoil.

In Southern Alberta, serious water erosion, of all three types, occurs most frequently in the foothills region, where the precipitation is heavier and the slopes are steeper. The more serious losses occur also on the heavier soils, such as in the Pincher Creek region and Drumheller district, where the clay soil does not permit the rapid percolation of the water. When the subsoil is frozen serious erosion may occur on the soil type. Also a heavy downpour may cause water erosion even in the drier areas of Southern Alberta.

Water erosion usually washes away the finer particles of the soil, namely the silt and clay, which are also the highest in fertility. In tests made of the water from the Oldman River at a point near Lethbridge, on May 25, 1948 (at which time the peak of the flow was over), it was found that the river was carrying 1.142 percent of suspended soil particles. By calculation, it is computed that the river was carrying away Alberta's topsoil at the rate of 8115 tons per hour. On the basis of the number of acres to a depth of 6 inches, it is calculated that 19 acres or more than one quarter sec-

tion of surface soil is lost per day, when conditions as noted above prevail. This is a very serious drain on Alberta's most valuable natural resources and steps should be taken at once to minimize this loss.

## NEWS NOTES

The regular meeting of the Friday Night Club was held June 10 at the home of Mrs. Nita Mendenhall with Mrs. Eleanor Cook assistant hostess. Thirteen members were present. Mrs. Letitia Litchfield gave an interesting review of the book "Get

Three Behind Me" by Hartzell Spence. At the conclusion of the meeting a delicious lunch was served by the hostess.

Miss Lavon Paxman left Thursday for Salt Lake where she will spend the next few weeks in the mission school prior to leaving for Eastern Canada where she will labor for eighteen months as a missionary.

**WARNING! Roasting makes all the difference in coffee. Maxwell House is "Radiant Roasted" . . . a remarkable process that roasts every bean evenly all through — captures every atom of rich coffee goodness.**

## PRAIRIE REGION TALKS



The CBC's specialist in the Prairie Region, concerned particularly with talks for women, is Miss Catherine MacIver of Winnipeg. Miss MacIver is a native of Saskatchewan and a former school teacher. She is a graduate of the University of Western Ontario, London, Ontario.



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Emergency Import Control Division,  
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## Special Stampede Night Attraction

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★ **WELL-KNOWN** ★  
★ **YOU WITH HIS SLACK WIRE ACT!** ★  
★ **TWO HANDSOME YOUNG MEN** ★  
★ **IN A SENSATIONAL HAND BALANCING ACT!** ★

Advance Ticket Sale Starts  
Jun 23 at the  
S.B. Card Office, Raymond

**Raymond Stampede Grounds**  
**8.00 p.m., Thurs., JULY 1st**

## Mr. Combine Owner . . .

We have a supply of NEW MOTORS and Attachments for changing Cockshutt, John Deere, Case and Allis Chalmers Six Foot Power Take-Off Combines

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By DR. F. J. GREANEY.

Director,  
Line Elevators Farm Service,  
Winnipeg, Manitoba.

### Chemical Summerfallow

This year, many prairie farmers are particularly interested in the possibility of a "Chemical Summerfallow" replacing, at least in part, tedious and costly cultural practices for weed control.

**Limitations.** The results of chemical summerfallow trials made in Western Canada in 1947, indicate that the use of 2,4-D and other chemical weed killers in controlling weeds on summerfallow land has definite limitations. As a complete substitute for mechanical cultivation, the results now available strongly suggest that chemical summerfallow will be largely confined to areas or fields where the weeds present are exclusively or predominately Wild Mustard, Sunkweed and certain other susceptible annual weeds. The emergence of these weeds can be almost completely prevented by early applications of 2,4-D at rates that are recommended for the control of these weeds in growing crops.

It is already abundantly clear that land infested with resistant weeds such as Wild Oats, Couch (Quack) Grass, Wild Barley, Green Foxtail, Cow Cockle and Peppergrass, will not lend itself to chemical summerfallow. Early applications of 2,4-D to such land will simply remove the susceptible annual weeds, tend to reduce the top growth of the partially-resistant weeds (Canada Thistle, Perennial Sow Thistle, etc.), and allow the above-mentioned resistant weeds to flourish without competition.

For the effective control of Canada Thistle and Perennial Sow Thistle on land under summerfallow, heavy applications of the Ester form of 2,4-D, made when the buds are well formed or during the early flowering stage, are recommended. One and one-half pounds of 2,4-D acid equivalent per acre is suggested.

**More Information Needed** No one has all the answers to the numerous problems associated with "chemical summerfallow". More research and field experiments are needed. Farmers planning extensive chemical summerfallow operations this year should consult their local Agricultural Representative or provincial weed authorities, or for further information write to Line Elevators Farm Service, Winnipeg.

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